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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/068,611	02/06/2002	Michael Cleary	CLEARY - 1	6811

7590 04/20/2004

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EXAMINER

STACOVICI, STEFAN

ART UNIT PAPER NUMBER

1732

DATE MAILED: 04/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/068,611

**Applicant(s)**

CLEARY, MICHAEL

**Examiner**

Stefan Staicovici

**Art Unit**

1732

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on January 29, 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 8-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 8-15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Response to Amendment***

1. Applicant's amendments filed January 27, 2004 and January 29, 2004 have been entered. Claims 1 and 4 have been amended. Claims 5-7 have been canceled. No new claims have been added. Claims 1-4 and 8-15 are pending in the instant application.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-2, 4 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 334 347 in view of Brogger *et al.* (US Patent No. 6,309,690 B1) and in further view of Ridinger (US Patent No. 4,724,219) and Stevens (US Patent No. 4,390,452).

GB 2 334 347 teaches the basic claimed process of forming microparticles including, affixing a wafer (substrate sheet) to a support and subjecting said wafer to a wet etching process that simultaneously divides said wafer (substrate sheet) into a plurality of microparticles and etches holes through each microparticle, said holes forming an identifiable code and, removing said microparticles from said support (see page 12, line 15 through page 13, line 12 and Figure 3). It is submitted that said resulting microparticles have predefined dimensions because they have physical dimensions after being cut and the process of cutting is a controlled process.

Regarding claims 1 and 2, GB 2 334 347 does not teach laser etching. Brogger *et al.* ('690) teach the use of a laser to encode symbols on microparticles by ablating the outer surface of said microparticles to form recesses (see col. 7, lines 15-24). Ridinger ('219) teaches a laser etching process that provides a much simpler process than a wet etching process (see Abstract), said laser process using a single laser. Therefore, it would have been obvious for one of ordinary skill in the art to have used a single laser as taught by Brogger *et al.* ('690) to form microparticles in the process of GB 2 334 347 because, Ridinger ('219) specifically teaches that laser etching using a single laser is a much simpler process than wet etching, hence providing for an improved process and also because Brogger *et al.* ('690) specifically teaches the use of a laser in etching microparticles as an equivalent alternative. It is submitted that laser etching occurs by ablation, hence evaporation of the laser etched material.

Further regarding claims 1 and 2, although GB 2 334 347 teaches a metallic microparticle (see page 28, lines 3-4), GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) do not teach a microparticle having a metallic layer deposited by vacuum deposition. Stevens ('452) teach microparticles that include a metallic layer (see col. 3, lines 10-12) coated onto an organic resin substrate (plastic) (see col. 2, lines 53-57). Therefore, it would have been obvious for one of ordinary skill in the art to have provided a metallic vapor coating as taught by Stevens ('452) to the microparticles obtained by the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) because Brogger *et al.* ('690) specifically teaches that a metal ablated layer is likely more difficult to counterfeit, hence

improving product quality. It is submitted that “ablation” requires a laser process that melts said metallic layer to form recesses (see col. 7, lines 15-25 of Brogger *et al.* (‘690)).

Further in regard to claims 1 and 2, although Brogger *et al.* (‘690) teach laser ablation of indicia (see col. 7, lines 15-16). Stevens (‘452) teaches microparticles bearing indicia such as alphanumeric (digits) characters (see Abstract and Figure). Therefore, it would have been obvious for one of ordinary skill in the art to have provided alphanumeric indicia as taught by Stevens (‘452) to the microparticles obtained by the process of GB 2 334 347 in view of Brogger *et al.* (‘690) and in further view of Ridinger (‘219) because Stevens (‘452) specifically teaches that alphanumeric indicia allows for much faster decoding (see col. 1, lines 30-35) and also because, Brogger *et al.* (‘690) specifically teaches laser ablation of indicia on the exterior surface of a microparticle, whereas Stevens (‘452) teaches that indicia includes both letters and alphanumerics (digits).

In regard to claim 4, GB 2 334 347 teaches reading said code of said microparticles based on light transmittance (see page 11, lines 22-24).

Specifically regarding claims 8-10, GB 2 334 347 teaches said wafer (substrate) is adhesively bonded to a glass plate support (sheet of inert material) plate (see page 7, lines 18-21).

Regarding claim 11, GB 2 334 347 teaches removing said microparticles by dissolving said adhesive (see page 7, lines 19-21) using a solvent (see page 13, lines 8-9).

In regard to claim 12, Brogger *et al.* (‘690) teach suspending said microparticles in a lacquer and applying (painting/sprayed) said lacquer/microparticle mixture to an object (see col.

7, lines 34-36 and 38-51). It is submitted that said lacquer/microparticle can be painted or sprayed.

4. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 334 347 in view of Brogger *et al.* (US Patent No. 6,309,690 B1) and in further view of Ridinger (US Patent No. 4,724,219), Stevens (US Patent No. 4,390,452) and Mead *et al.* (US Patent No. 6,541,731 B2).

GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) teaches the basic claimed process as shown above.

Regarding claim 3, GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) do not teach separate laser devices. Mead *et al.* ('731) teach a laser drilling process using separate laser systems that work on the same workpiece simultaneously (see col. 6, line 64 through col. 7, line 5 and Figure 11). Therefore, it would have been obvious for one of ordinary skill in the art to have provided separate laser devices as taught by Mead *et al.* ('731) in the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) because, Mead *et al.* ('731) specifically teaches that using separate laser devices increases repetition rates and pulse duration, hence improving process control and versatility (see col. 2, lines 25-30).

5. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 334 347 in view of Brogger *et al.* (US Patent No. 6,309,690 B1) and in further view of Ridinger (US Patent No. 4,724,219), Stevens (US Patent No. 4,390,452) and Wamprecht *et al.* (US Patent No. 4,990,583).

GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) teaches the basic claimed process as shown above.

Regarding claim 13, although Brogger *et al.* ('690) teach a transparent lacquer as a suspension, GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) do not teach a suspension including an antioxidant. However, the use of antioxidants in lacquers is well known as evidenced by Wamprecht *et al.* ('583) which teach that the use of antioxidants in clear coatings of lacquer is conventional (see col. 7, lines 45-50). Therefore, it would have been obvious for one of ordinary skill in the art to have used an antioxidant as taught by Wamprecht *et al.* ('583) in the lacquer of the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) because, Wamprecht *et al.* ('583) specifically teach that antioxidants are needed to form a clear lacquer which is required by Brogger *et al.* ('690).

6. Claims 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2 334 347 in view of Brogger *et al.* (US Patent No. 6,309,690 B1) and in further view of Ridinger (US Patent No. 4,724,219), Stevens (US Patent No. 4,390,452) and Gee *et al.* (US Patent No. 6,527,965 B1).

GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) teaches the basic claimed process as shown above.

Regarding claims 14-15, GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) do not teach a computerized laser system such that said support is movable with reference to an impinging laser beam. Gee *et al.* ('965) teach a

computerized laser system including a movable mounting stage (support) positioned in a plane perpendicular to said impinging laser beam (see Figure 1). Therefore, it would have been obvious for one of ordinary skill in the art to have provided the computerized system of Gee *et al.* ('965) in the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452) because, Gee *et al.* ('965) specifically teaches that such a laser system is best suited for cutting of a silicone wafer (substrate) into a plurality of components (microparticles) which is required by the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) and Stevens ('452).

#### ***Response to Arguments***

7. Applicant's arguments filed January 27, 2004 and January 29, 2004 have been considered.

Applicant's amendments filed January 27, 2004 and January 29, 2004 have introduced limitations in a combination not previously presented. Accordingly, the newly argued claim limitations have been rejected in this Office Action as set forth above. However, it is noted that in response to Applicant's argument that there is no suggestion to combine the references (see page 8 of the amendment filed January 27, 2004), the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in



the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case:

(a) the primary reference of GB 2 334 347 teaches a process for forming microparticles including, affixing a wafer (substrate sheet) to a support and subjecting said wafer to a wet etching process that simultaneously divides said wafer (substrate sheet) into a plurality of microparticles and etches holes through each microparticle, said holes forming an identifiable code and, removing said microparticles from said support;

(b) the secondary reference of Brogger *et al.* ('690) teach the use of a laser to encode symbols on microparticles by ablating (melting/vaporizing the metallic layer) the outer surface of said microparticles to form recesses (see col. 7, lines 15-24).;

(c) the secondary reference of Ridinger ('219) teaches a laser etching process that provides a much simpler process than a wet etching process (see Abstract), said laser process using a single laser;

(d) the secondary reference of Stevens ('452) teaches microparticles that include a metallic layer (see col. 3, lines 10-12) coated onto an organic resin substrate (plastic) (see col. 2, lines 53-57) bearing indicia such as alphanumeric (digits) characters (see Abstract and Figure);

Under MPEP §2143.01, "[O]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." In this case, it would have been obvious for one of ordinary skill in the art to have used a single laser as

taught by Brogger *et al.* ('690) to form microparticles in the process of GB 2 334 347 because, Ridinger ('219) specifically teaches that laser etching using a single laser is a much simpler process than wet etching, hence providing for an improved process and also because Brogger *et al.* ('690) specifically teaches the use of a laser in etching microparticles as an equivalent alternative. Further, although Brogger *et al.* ('690) teach laser ablation of indicia (see col. 7, lines 15-16), Stevens ('452) teaches microparticles bearing indicia such as alphanumeric (digits) characters (see Abstract and Figure). Therefore, it would have been obvious for one of ordinary skill in the art to have provided alphanumeric indicia as taught by Stevens ('452) to the microparticles obtained by the process of GB 2 334 347 in view of Brogger *et al.* ('690) and in further view of Ridinger ('219) because Stevens ('452) specifically teaches that alphanumeric indicia allows for much faster decoding (see col. 1, lines 30-35) and also because, Brogger *et al.* ('690) specifically teaches laser ablation of indicia on the exterior surface of a microparticle, whereas Stevens ('452) teaches that indicia includes both letters and alphanumerics (digits).

Furthermore, it is submitted that the teachings of GB 2 334 347, Brogger *et al.* ('690) and Stevens ('452) are related to similar end products and solve similar problems. As such, under MPEP §2143.01, it is submitted that the motivation to combine the prior art of record is derived from "the nature of the problem to be solved, the teachings of the prior art, and the knowledge of persons of ordinary skill in the art" (See In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457- 58 (Fed. Cir. 1998)) because the teachings of GB 2 334 347, Brogger *et al.* ('690) and Stevens ('452) are related to similar end products and solve the same problem of forming indicia on microparticles.

Applicants argue that the art of record does not teach or suggest, either alone or in combination, microparticles having predefined dimensions (see page of the amendment filed January 29, 2004). However, this argument is drawn to a newly presented claim limitation not previously presented and has been rejected in this Office Action as set forth above.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stefan Staicovici, Ph.D. whose telephone number is (571) 272-1208. The examiner can normally be reached on Monday-Friday 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael P. Colaianni, can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stefan Staicovici, PhD



Primary Examiner

4/12/04

AU 1732

April 17, 2004